

REMARKS

Claims 1-19 are pending in this application. By this Amendment, claims 1-2, 4-5 and 11-12 are amended and claims 16-19 are added. Independent claims 1, 4 and 11 are amended to recite that the temperature maintenance operation is carried out while an ignition key of the vehicle is in the off position. Support can be found, for example, in paragraph [0027] of the specification as filed. Independent claims 1, 4 and 11 are further amended to recite that the temperature detector or step of detecting is done while the vehicle ignition key is in the off position and that the fuel cell is maintained above the first temperature by at least restarting the fuel cell. Support can be found, for example, in paragraphs [0027] and [0029], respectively, of the specification as filed. No new matter is added.

I. The Claims Are Definite

The Office Action rejects claims 1-10 and 13-14 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

By this Amendment, independent claims 1, 4 and 11 are amended to recite that a temperature-maintenance operation on the fuel cell is using heat generated through electrochemical reaction by at least partially restarting the fuel cell. Further, by this Amendment, claims 1-2, 4-5 and 11-12 are amended to change "fuel cell operating temperature" to "fuel cell temperature".

For the foregoing reasons, Applicants request withdrawal of the rejection.

II. The Claims Are Patentable Over The Applied References

The Office Action (1) rejects claims 1-10 under 35 U.S.C. §102(b) or, in the alternative, under 35 U.S.C. §103(a) over U.S. Patent Publication No. 2001/0053469 to Kobayashi et al. (Kobayashi); (2) rejects claims 11 and 12 under 35 U.S.C. §103(a) over Kobayashi in view of U.S. Patent Publication No. 2003/0029179 to Vander Woude et al. (Vander Woude); (3) rejects claims 13 and 14 under 35 U.S.C. §103(a) over Kobayashi in

view of U.S. Patent Publication No. 2003/0031905 to Saito et al. (Saito); and (4) rejects claim 15 under 35 U.S.C. §103(a) over Kobayashi in view of Vander Woude, and further in view of Saito. Kobayashi has issued as U.S. Patent No. 6,936,359 and Saito has issued as U.S. Patent No. 7,179,556. Applicants respectfully traverse the rejections.

Regarding independent claims 1, 4 and 11, Kobayashi does not disclose:

(1) "a temperature-maintenance operation controller configured to execute, if said detected fuel cell temperature equals or is less than a first reference temperature while the ignition key is in an off position and said fuel cell system is not operating, a temperature-maintenance operation on said fuel cell using heat generated through electrochemical reaction by at least partially restarting the fuel cell" (claim 1 and similarly recited in claims 4 and 11)

(2) "an abnormality determination unit configured to determine whether a detection abnormality regarding said fuel cell temperature has occurred in said temperature detector, including determining that a detection abnormality has occurred when the temperature detector is operating abnormally but is not outputting an abnormal temperature reading" (claims 1 and 4) and "determining whether an abnormality has occurred in a temperature detector that detects said fuel cell temperature when said fuel cell temperature is detected, including determining that a detection abnormality has occurred when the temperature detector is operating abnormally but is not outputting an abnormal temperature reading" (claim 11);

(3) "a warning issuance unit configured to issue a warning when said abnormality determination unit determines that an abnormality has occurred in said temperature detector" (claim 1) and "issuing a warning when an abnormality is detected in said temperature detector" (claim 11); and

(4) the temperature detector operating to detect the fuel cell temperature when the ignition key in the off position (claims 1 and 4 and similarly recited in claim 11).

Regarding independent claims 1, 4 and 11, the Office Action discusses intended use limitations and functional statements and essentially states such statements do not have to be accorded patentable weight. The Office Action states, in reference to claim 1, for example, that a recitation that an element is "capable" of performing a function is not a positive limitation. However, none of the claims recite any feature that includes the term "capable". In contrast, prior claims 1 and 4 recited structural features using affirmative language that, by their plain meaning, require specific structural characteristics. For example, prior claim 1 recited "a temperature detector that detects a fuel cell operating temperature". The language "that detects" requires the temperature detector to have the structure necessary to be able to carry out the recited characteristics (detecting). All of the features of prior independent claims 1, 4 and 11 were of this form, having affirmative, positive language. Thus, the Office Action's assertion that there somehow is intended use statements and functional language in the claims that do not need to be accorded patentable weight is incorrect.

Nevertheless, by this Amendment, independent claims 1, 4 and 11 are amended to change language such as "that detects" to language of the form "configured to detect". Thus, claim 1 now recites, for example, "a temperature detector configured to detect a fuel cell temperature" ("operating" has also been removed from this feature). Applicants request that the Office Action provide full patentable weight to all the features of the claims, as required under patent law.

Kobayashi fails to disclose features (1) and (4) quoted above because Kobayashi's apparatus GS1 warms up fuel cell 1 as an initial part of operating the fuel cell 1 (Fig. 1; paragraph [0051]), not during a time when the fuel cell 1 is not going to be operated normally. Thus, Kobayashi does not disclose that the apparatus GS1 operates when an ignition key is off.

Kobayashi fails to disclose feature (2) quoted above because controller 4 is not configured to determine whether a detection abnormality regarding said fuel cell temperature has occurred in said temperature detector. Kobayashi simply does not have this capability, and thus the structure necessary to perform this operation is not present in Kobayashi. The Office Action's arguments, in asserting that the controller 4 corresponds to the claimed abnormality determination unit / step of determining essentially appears to be that the controller 4 will detect abnormal temperatures, which can result from an abnormal temperature as well as an abnormality in the temperature sensors, provided the abnormality results in the output of an abnormal temperature. However, Kobayashi fails to disclose an abnormality determination unit / step that determines that a detection abnormality has occurred when the temperature detector has functioned abnormally, but outputs a temperature reading that is not abnormal, as recited in the claims.

Kobayashi fails to disclose feature (3) quoted above because Kobayashi does not disclose a warning unit that produces a warning when an abnormality is detected in the temperature detector(s), as recited by the claims, as opposed to reporting a warning when an abnormal temperature is detected.

Vander Woude, cited in relation to independent claim 11 as allegedly disclosing the determination of sensor abnormalities, does not cure any of the deficiencies of Kobayashi. As acknowledged by the Office Action, Vander Woude detects that a sensor is faulty by determining that the sensor output is outside a predetermined range, citing to paragraph [0044]. Thus, Vander Woude cannot determine that a sensor is faulty when the temperature output by the sensor is not abnormal. In contrast, independent claims 1, 4 and 11 recite that a detection abnormality is determined when a detection abnormality has occurred but an abnormal temperature is not output.

For the foregoing reasons, Applicants request withdrawal of the rejections.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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